



ARIZONA-SONORA  
DESERT  
MUSEUM

## *Web of Life*

A forty-five minute Discovery Class program

### **To the Teacher:**

Thank you for making the *Web of Life* Desert Discovery Class a part of your curriculum. During this exciting educational program, students will see live desert animals, handle artifacts, and perhaps serve as a volunteer for a program demonstration.

This packet contains pre- and post- program information and activities along with a vocabulary list and suggested resources. These materials were developed to help you extend this class topic with both introductory and follow-up lessons. The pre-visit information will introduce students to some of the basic concepts presented in the *Web of Life*, and help prepare them for the class. We hope you'll find this information useful and easy to incorporate into your science curriculum. For more information about the Desert Museum and the Sonoran Desert, visit our website at [www.desertmuseum.org](http://www.desertmuseum.org).

Sincerely,  
ASDM Center for Sonoran Desert Studies  
Education Department

## **Web of Life**

Piece together an ecological "circle of life" to reveal the basic concepts of photosynthesis, food chains, food webs and energy flow. Discover the intricate nature of their interrelationships. Meet the "living links" from some desert food chains.

### **Class objectives:**

Through the examination of hands-on artifacts, live animals, and interactive demonstrations students will:

- Develop and understanding of the concept or energy flow
- Classify Sonoran Desert species according to trophic levels
- Create a simple food web using Sonoran Desert plants and animals
- Identify physical and behavioral adaptations that allow animals and plants to survive within their ecological niche
- Understand the interactions and interdependence among producer and consumer populations within an ecosystem

## ARIZONA ACADEMIC STANDARDS IN SCIENCE CORRELATION

The Web of Life program and supplemental activities correlate to these Arizona Academic Science Standards. See each activity for specific standards and performance objectives.

SC03-S3C1-01&02, SC05-S3C1-02, SC04-S4C1-01, SC03-S4C4-01&03, SC03-S4C3-01, SC04-S4C1-02, SC03-S4C3-01&04

### Science Standards:

#### Strand 1: Inquiry Process

Concept 1: Observations, Questions, and Hypotheses

Concept 2: Scientific Testing

Concept 3: Analysis and Conclusions

Concept 4: Communication

#### Strand 2: History and Nature of Science

Concept 1: History of Science as a Human Endeavor

Concept 2: Nature of Scientific Knowledge

#### Strand 3: Science in Personal and Social Perspectives

Concept 1: Changes in Environment

Concept 2: Science and technology in Society

Concept 3: Human Population Characteristics

#### Strand 4: Life Science

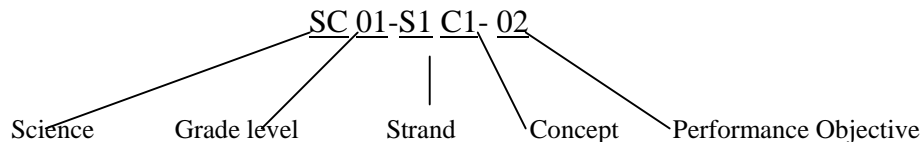
Concept 1: Characteristics of Organisms

Concept 2: Life Cycles

Concept 3: Organisms and Environments

Concept 4: Diversity, Adaptation and Behavior

The shorthand for each standard is read this way:



### Activity Books – Activity Guides - Magazines

- Braus, J., ed. Ranger Rick's NatureScope: *Discovering Deserts!* Washington D.C.: National Wildlife Federation, McGraw-Hill Companies, 1985. (For ordering information call:1-800-722-4726)
- Braus, J., ed. Ranger Rick's NatureScope: *Endangered Species.* Washington D.C.: National Wildlife Federation, McGraw-Hill Companies, 1987.
- National Science Teachers Association. *Science and Children.* 1840 Wilson Blvd. Arlington, Virginia 22201-3000.
- *OBIS.* 12 Simon Street. Nashua, New Hampshire. Delta Education.

## Books for Students

- Buxton, Jame H. *Creatures of the Desert World*. Los Angeles: Intervisual Communications, Inc., 1987.
- Gibbons, Gail. *Deserts*. New York: Holiday House, 1996.
- Reading, Susan. *Desert Plants*. New York: Facts on File, Inc. 1990.
- Mc Carthy, C. *Eyewitness Books: Desert*. New York: Alfred A. Knopf, 1991. (Many other books in the *Eyewitness* series contain information on desert species.)

## Video (often available at public libraries or through your school)

- Saguaro, Sentinel of the Desert. (*The Best of Nature*)

## Web sites/Organizations

- Arizona-Sonora Desert Museum: [www.desertmuseum.org](http://www.desertmuseum.org)
- Desert USA: [www.desertusa.com/animal.html](http://www.desertusa.com/animal.html)
- The Nature Conservancy: [www.tnc.org](http://www.tnc.org)

## Vocabulary words

**Abiotic:** The non-living parts of the environment—rocks, water, climate.

**Adaptation** - A physical or behavioral feature of a plant or animal that helps it survive in its environment. For example, a hawk's talons help it catch and kill its food.

**Carnivore** - A meat-eating animal; a *secondary consumer*.

**Consumer** - An animal that eats either plants or other animals.

**Decomposer** - An organism that breaks down dead plant and animal materials into their chemical components through the process of decay. Example: mushrooms and other fungi.

**Ecologist** - A scientist who studies the interrelationships between and among living things and their environment. This scientist studies *ecology*.

**Food Chain** - A group of plants and animals in a natural community through which energy flows in the form of food.

**Food Web** - The interrelationships of plants, primary and secondary consumers.

**Herbivore** - A plant-eating animal; a *primary consumer*.

**Nutrients** - Minerals in soil available to plants.

**Omnivore** - An animal that feeds upon both plants and animals; a *secondary consumer*.

**Photosynthesis** - the chemical process in plants whereby carbon dioxide and water, in the presence of sunlight and using chlorophyll as the catalyst, are combined to produce basic sugars.

**Population** – a group of organisms of one kind that lives in the same area.

**Predator** - An animal that kills to obtain its food; a secondary consumer. (*Encourage the use of the word predator in place of enemy. A predator does not hate its prey. It is merely hungry and is obtaining food in the way for which it is best adapted.*)

**Prey** - An animal killed as a food source by a predator.

**Producers** – Green plants that make their own food.

**Scavenger** - An animal that eats the remains of dead animals (carrion). Example: vulture.

## **PRE-PROGRAM INFORMATION AND ACTIVITIES**

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### **DAISY ECOLOGY**

Students recite a poem that illustrates the concept of a food chain.

## **POST-PROGRAM INFORMATION AND ACTIVITIES**

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### **DEPENDING UPON ONE ANOTHER (Student Worksheet)**

Students complete a worksheet to review the concepts of Sonoran Desert food chains and food webs.